

In the Claims

1 1. (original) A method for modeling a graphics object, comprising:
2 providing a model of the graphics object;
3 generating a first adaptively sampled distance field for the model;
4 constructing a topological hint;
5 generating a second adaptively sampled distance field for the
6 topological hint;
7 sampling first locations of the second adaptively sampled distance
8 field to determine a corresponding topological feature for each location;
9 determining second locations in the first adaptively sampled distance
10 field from the corresponding topological features of the second adaptively
11 sampled distance field; and
12 sampling the first adaptively sampled distance field at the second
13 locations to determine a distance value for each of the second locations to
14 model the graphics object according to the topological hint.

1 2. (original) The method of claim 1 wherein the topological features are
2 distance values of the second adaptively sampled distance field, further
3 comprising:
4 generating a third adaptively sampled distance field from the distance
5 values at each second location.

1 3. (original) The method of claim 2 further comprising:
2 rendering the third adaptively sampled distance field.

1 4. (original) The method of claim 1 wherein the topological hint is
2 constructed from graphics primitives.

1 5. (original) The method of claim 4 wherein the graphical primitive has a
2 corresponding implicit function, and the second adaptively sample distance
3 field is generated from the implicit function.

1 6. (original) The method of claim 1 wherein the topological hint is
2 constructed from a plurality of graphical primitives, and further comprising:
3 generating a primitive adaptively sampled distance field for each
4 graphics primitive;
5 combining the plurality of primitive adaptively sampled distance
6 fields to generate the second adaptively sampled distance field.

1 7. (previously presented) The method of claim 6 wherein the combining
2 includes (CSG) operations.

1 8. (original) The method of claim 1 wherein the topological features are
2 distance values of the second adaptively sampled distance field, and the
3 distance values of the first and second adaptively sampled distance fields are
4 combined.

1 9. (currently amended) The method of ~~claim~~ claims 1, 2, 5, or 6 wherein the
2 generating comprises defining a candidate cell of the adaptively sampled
3 distance field, determining and storing distance values of the candidate cell
4 in a bounded distance tree, recursively subdividing the candidate cell into
5 subdivided cells of the adaptively sampled distance field while determining

- 6 and storing corresponding distance values of the subdivided cells in the
- 7 bounded distance tree until a termination condition is reached, and
- 8 appending the distance values to the corresponding cells to generate the
- 9 adaptively sampled distance field of the object.